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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Analytical Services and Quality Assurance Branch

Environmental Science Center

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Date: November 4, 2004

Subject: Supplement to Test Report
R31935; New Jersey Fireworks (REQ04200)

To: Analytical Case File REQ04200

Thru: Patricia Krantz, Director *[Signature]*

From: Patricia Sosinski, Chemist *[Signature]*
Sample Scheduling Coordinator

This is a Supplement to the Final Data Report for the ASQAB Final Data Report for R31935; New Jersey Fireworks (REQ04200). The EPA Region III Analytical Services and Quality Assurance Branch released a Final Data Report for R31935; New Jersey Fireworks (REQ04200) on September 13, 2004. The analyses provided were Percent Dry Weight for soils and Perchlorates for soils and waters by EPA Method 314, Determination of Perchlorate in Drinking Water Using Ion Chromatography (IC). This Supplement to Test Report for R31935; New Jersey Fireworks (REQ04200) consists of this Memo to Case File REQ04200, a the Table of Sample Results of the re-issued perchlorate data, and the Data Validation Report for the confirmatory analyses by LC-MS.

Background Information

Recent information from EPA, DOD and DOE indicates that interference effects are possible for some sample matrices, which can result in false positives for perchlorates by IC. A soon to be issued proposed rule from the Office of Groundwater and Drinking Water is expected to be effective in December of 2004; this rule will require confirmation of positive perchlorate results by EPA 314 (IC) LC/MS, IC/MS, or LC/MS/MS. Liquid Chromatography/Mass Spectrophotometry (LC/MS) has been selected by ASQAB for use in confirming positive perchlorate results, and the decision was made to send samples with quantitative values for perchlorate by EPA 314 to an external lab for confirmation. This information was shared with the EPA SAM, Lorie Baker, along with 2 options for reporting the data from R31935; New Jersey Fireworks (REQ04200):

1. The Due Date for the Final Data Report could be extended to allow time for some of the samples with quantitative perchlorate values by EPA 314 to be sent for confirmation by LC/MS, received, validated, and compared to the IC data. The Final Data Report would be based on the outcome of the comparison.
2. The Final Data Report could be issued in September 2004 with the quantitative perchlorate

values flagged "N" to indicate the presumptive presence and tentative identification of perchlorate. After the data from the samples sent for confirmation by LC/MS were received, validated, and compared to the IC data, Supplement to the Final Data Report for R31935; New Jersey Fireworks (REQ04200) could be created and sent to the customers.

Ms. Baker requested the second option, and the Final Data Report for R31935; New Jersey Fireworks (REQ04200) was mailed on September 13, 2004.

Five samples from R31935; New Jersey Fireworks (REQ04200), 3 soils and 2 waters with the highest values for perchlorates, were shipped to Datachem Laboratories on September 2, 2004. The Station Locations submitted for confirmation analysis of perchlorate by LC/MS were R31935-SS22, R31935-PW5, R31935-GW2, R31935-MW4, and R31935-SED6. The validated confirmation data were made available to ASQAB scientists on October 21, 2004 for comparison to the EPA 314 data. After validation, 4 of the 5 samples had usable data for comparison, and all 4 were positive for perchlorate. The group agreed that the data by IC should be considered quantitative data, and the "N" flag for tentative identification was no longer appropriate.

ASQAB is proposing that confirmation of IC perchlorate data be performed once per site. Having this confirmation on record will allow us to provide perchlorate analyses by IC for future requests for New Jersey Fireworks. If this is contradicted by the Rule that is expected December of 2004, ASQAB will advise our customers of the requirements in the Rule, and change ASQAB's process to be compliant with the Rule.

Please contact Pat Sosinski at 410/305-2667 if you have additional questions.

cc: Joseph Slayton, ASQAB Technical Director

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DATE: October 19, 2004

SUBJECT: Organic Data Validation (M3 Level)
Case: R31935 SDG: R31935
Site: New Jersey Fireworks

FROM:

[Redacted]
Senior Data Reviewer

[Redacted]
Senior Oversight Chemist

TO: Khin-Cho Thuang
ESAT Region 3 Project Officer

OVERVIEW

DAS R31935, Sample Delivery Group (SDG) R31935, from the New Jersey Fireworks site consisted of three (3) aqueous and two (2) soil samples submitted to Datachem Laboratories (DATAC) for perchlorate analyses. The sample set contained no field Quality Control (QC) samples. The samples were analyzed for this analyte in accordance with EPA Test Methods for Evaluating Solid Waste, SW-846 Method 6850 (Draft) through the Delivery of Analytical Services (DAS) program.

SUMMARY

All samples were successfully analyzed for the target parameter except sample R31935-SED6. All other instrument and method sensitivities were according to the above referenced method. Areas of concern with respect to data usability are listed below. Analytical results for all samples are reported on a single Data Summary Form (DSF) in Appendix B.

MAJOR PROBLEM

- The ion ratio for the ions (83/85) monitored for perchlorate was outside the control limits (2.2 - 3.3) in sample R31935-SED6. The quantitation limit for this sample was rejected and qualified "R" on the DSF.

MINOR PROBLEM

- All samples were collected 8/3/04 to 8/5/04 and were analyzed 9/29/04 or 9/30/04. The aqueous technical holding time of twenty-eight (28) days for perchlorate in these samples was exceeded by twenty-eight (28) to thirty (30) days. The aqueous holding times was also applied to the soil samples. Positive results for these samples were qualified "L" on the DSFs unless superseded by "J". The "UL" qualifier in sample R31935-SED6 has been superseded by "R" on the DSF.

NOTES

- The Internal Standard (IS) recovery was outside the lower QC limit (<70%) in sample R31935-GW2 in the initial undiluted analysis possibly due to matrix effect. The sample was re-analyzed at a one hundred fold (100X) dilution and the IS recovery was within control limits. The result from the diluted analysis is reported on the DSF.

- No positive results were reported in the analyses of the method blanks associated with this data case.
- All recoveries and Relative Percent Differences (RPDs) in the Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses were within QC limits.
- Based on the preparation log, it appears that for the soil MS/MSD analyses the laboratory used the sample extract from the parent sample to prepare the spiked samples instead of extracting separate MS/MSD samples.
- All recoveries in the Laboratory Control Sample (LCS) analyses were within QC limits.
- Samples R31935-GW2, R31935-PW5 and R31935-SS22 were re-analyzed at 100X, 10X and 100X dilutions, respectively, due to the high concentration of perchlorate in these samples. The reporting limits are elevated in these samples due to the dilutions.
- Sample volume (9.93 mL) and glacial acetic acid volume (20 μ L) used by the laboratory varied slightly from the volumes specified in the method (10 mL and 50 μ L, respectively).
- The reporting limit is based on the lowest calibration standard (0.2 μ /L).

All data for DAS R31935, SDG R31935, were reviewed in accordance with the National Functional Guidelines for Evaluating Organic Analyses with Modification for use within Region III.

ATTACHMENTS

INFORMATION REGARDING REPORT CONTENT

APPENDIX A	GLOSSARY OF DATA QUALIFIER CODES
APPENDIX B	DATA SUMMARY FORMS
APPENDIX C	CHAIN OF CUSTODY (COC) RECORDS
APPENDIX D	LABORATORY CASE NARRATIVES

DCN:R31935M3.wpd

DATA SUMMARY FORM: INORGANIC

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Case #: R31935

SDG : R31935

Number of Soil Samples : 2

Site :

New Jersey Fireworks

Number of Water Samples : 3

Lab. :

DATAC

Sample Number :	R31935-GW2	R31935-MW4	R31935-PW5								
Sampling Location :	R31935-GW2	R31935-MW4	R31935-PW5								
Laboratory Sample ID:	04C02553	04C02554	04C02552								
Field QC											
Matrix :	Water	Water	Water								
Units :	ug/L	ug/L	ug/L								
Date Sampled :	8/4/2004	8/4/2004	8/3/2004								
Time Sampled :	09:00	10:45	11:40								
Dilution Factor :	100.0	1.0	10.0								
ANALYTE	RL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Perchlorate	0.2	438	L	9.35	L	27.7	L				

RL = Reporting Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Sample Number :	R31935-SS22	R31935-SED6									
Sampling Location :	R31935-SS22	R31935-SED6									
Laboratory Sample ID:	04C02550	04C02551									
Field QC											
Matrix :	Soil	Soil									
Units :	ug/Kg	ug/Kg									
Date Sampled :	8/3/2004	8/5/2004									
Time Sampled :	10:25	09:35									
Percent Solids:	82.0	80.2									
Dilution Factor :	100.0	1.0									
ANALYTE	RL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Perchlorate	2.0	1790	L		R						

RL = Reporting Limit

SEE NARRATIVE FOR CODE DEFINITIONS

SITE NAME : NEW JERSEY FIREWORKS

LAB REQUEST #: REQ04200

INORGANIC ANALYTICAL SAMPLE RESULTS

SAMPLE NUMBER:	04080401	04080402	04080403	04080404	04080405
STATION ID:	S24	S25	SS11	SS13	SS14
	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Percent Dry Weight					
Percent Dry Weight (105C)	86.5 %	70.3 %	84.9 %	89.8 %	85.7 %
Perchlorate by IC					
Perchlorate	<0.005 mg/Kg	0.045 mg/Kg	<0.005 mg/Kg	<0.005 mg/Kg	<0.005 mg/Kg

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SITE NAME : NEW JERSEY FIREWORKS

LAB REQUEST #: REQ04200

INORGANIC ANALYTICAL SAMPLE RESULTS

SAMPLE NUMBER:	04080406	04080407	04080408	04080409	04080410
STATION ID:	SS21	SS22	SS23	SS24	PW5
	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Percent Dry Weight					
Percent Dry Weight (105C)	84.9 %	79.4 %	84.7 %	84.6 %	
Perchlorate by IC					
Perchlorate	0.036 mg/Kg	2.09 mg/Kg	<0.005 mg/Kg	<0.005 mg/Kg	21.0 ug/L

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SITE NAME : NEW JERSEY FIREWORKS

LAB REQUEST #: REQ04200

INORGANIC ANALYTICAL SAMPLE RESULTS

SAMPLE NUMBER:	04080411	04080412	04080413	04080414	04080415
STATION ID:	S11	S12	S13	S14	S15
	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Percent Dry Weight					
Percent Dry Weight (105C)	72.3 %	78.4 %	89.4 %	82.6 %	83.5 %
Perchlorate by IC					
Perchlorate	<0.005 mg/Kg	0.006 mg/Kg	0.025 mg/Kg	0.018 mg/Kg	0.009 mg/Kg

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SITE NAME : NEW JERSEY FIREWORKS

LAB REQUEST #: REQ04200

INORGANIC ANALYTICAL SAMPLE RESULTS

SAMPLE NUMBER:	04080416	04080417	04080418	04080419	04080506
STATION ID:	S16	S21	S22	S23	GW1
	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Percent Dry Weight					
Percent Dry Weight (105C)	78.5 %	71.9 %	80.9 %	89.1 %	
Perchlorate by IC					
Perchlorate	<0.005 mg/Kg	0.062 mg/Kg	0.007 mg/Kg	<0.005 mg/Kg	<1.00 ug/L

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SITE NAME : NEW JERSEY FIREWORKS

LAB REQUEST #: REQ04200

INORGANIC ANALYTICAL SAMPLE RESULTS

	SAMPLE NUMBER:	04080507	04080508	04080509	04080510	04080511
	STATION ID:	GW2	GW3	MW1	MW1A	MW2
		SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Percent Dry Weight						
Percent Dry Weight (105C)						
Perchlorate by IC						
Perchlorate		385 ug/L	4.79 ug/L	<1.00 ug/L	<1.00 ug/L	<1.00 ug/L

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SITE NAME : NEW JERSEY FIREWORKS

LAB REQUEST #: REQ04200

INORGANIC ANALYTICAL SAMPLE RESULTS

SAMPLE NUMBER:	04080512	04080513	04080514	04080610	04080611
STATION ID:	MW3	MW3A	MW4	SED1	SED2
	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Percent Dry Weight					
Percent Dry Weight (105C)				79.7 %	79.8 %
Perchlorate by IC					
Perchlorate	<1.00 ug/L	5.07 ug/L	22.6 ug/L	<0.005 mg/Kg	<0.005 mg/Kg

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SITE NAME : NEW JERSEY FIREWORKS

LAB REQUEST #: REQ04200

INORGANIC ANALYTICAL SAMPLE RESULTS

SAMPLE NUMBER:	04080612	04080613	04080614	04080615	04080616
STATION ID:	SED3	SED4	SED5	SED6	SED7
	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Percent Dry Weight					
Percent Dry Weight (105C)	64.8 %	80.1 %	61.0 %	74.0 %	63.6 %
Perchlorate by IC					
Perchlorate	<0.005 mg/Kg	<0.005 mg/Kg	<0.005 mg/Kg	0.103 mg/Kg	<0.005 mg/Kg

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SITE NAME : NEW JERSEY FIREWORKS

LAB REQUEST #: REQ04200

INORGANIC ANALYTICAL SAMPLE RESULTS

SAMPLE NUMBER:	04080617	04080618	04080619	04080620	04080621
STATION ID:	SED8	SW1	SW2	SW3	SW4
	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Percent Dry Weight					
Percent Dry Weight (105C)	68.0 %				
Perchlorate by IC					
Perchlorate	<0.005 mg/Kg	<1.00 ug/L	<1.00 ug/L	<1.00 ug/L	<1.00 ug/L

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SITE NAME : NEW JERSEY FIREWORKS

LAB REQUEST #: REQ04200

INORGANIC ANALYTICAL SAMPLE RESULTS

	SAMPLE NUMBER:	04080622	04080623	04080624	04080625	04080626
	STATION ID:	SW5	SW6	SW7	SW8	SW9
		SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Percent Dry Weight						
Percent Dry Weight (105C)						
Perchlorate by IC						
Perchlorate		<1.00 ug/L	8.51 ug/L	7.65 ug/L	7.52 ug/L	<1.00 ug/L

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